

GE-Housatonic
2.1
225336

United States Environmental Protection Agency
New England
Office of Site Remediation and Restoration
One Congress Street, Suite 1100, Boston, Massachusetts 02114-2023

Enforcement-Sensitive Information Attached



SDMS DocID 000225336

Memorandum

Date: April 28, 2005

Subject: Request for a Ceiling Increase for the 1 ½-Mile Reach Removal Action at the GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts—**Amended Action Memorandum**

From: *fs* Dean Tagliaferro, On-Scene Coordinator/GE Team Leader
Office of Site Remediation and Restoration

Through: Susan Studlien, Director *Susan Studlien*
Office of Site Remediation and Restoration

To: Robert Varney
Regional Administrator

I. Purpose

The purpose of this Action Memorandum is to request and document approval of a ceiling increase for the removal action described herein for the 1.5 Mile Reach Removal Action at the GE-Pittsfield/Housatonic River Site, Pittsfield, Massachusetts. The proposed removal action will mitigate the human health and environmental threats posed by the existing levels of polychlorinated biphenyls ("PCBs") and other hazardous substances in this 1 ½ mile portion of the Housatonic River. This ceiling increase is required for a number of reasons as described below on pages 7 and 8.

On November 21, 2000, Mindy Lubber, EPA New England's Regional Administrator, signed an Action Memorandum authorizing a removal action at the 1.5 Mile Reach (see attached). The November 21, 2000 Action Memorandum also approved a "consistency" exemption from the \$2 million and 12-month statutory limits for removal actions under the National Contingency Plan. If approved, this Action Memorandum will increase the total removal action project ceiling from \$63,760,000 to \$108,000,000.

EPA is performing the 1.5 Mile Reach Removal Action pursuant to a final Consent Decree in United States, et al. v. General Electric Company (D.Mass.) ("Consent Decree"). The Consent Decree memorializes an agreement to address releases and threats of releases of hazardous substances from GE's facility in Pittsfield, Massachusetts, including, but not limited to, the releases and threats of releases of hazardous substances addressed in this Action Memorandum.

The U.S. District Court for the District of Massachusetts formally approved and entered the Consent Decree on October 27, 2000.

The 1 ½ Mile Reach is part of the larger GE-Pittsfield/Housatonic River Site, as defined by the Consent Decree. The GE-Pittsfield/Housatonic River Site consists generally of the GE Plant Area, the Former Oxbow Areas, the Allendale School Property, the Housatonic River Floodplain Properties, the Silver Lake Area, the Upper ½ Mile Reach, the 1 ½ Mile Reach, and the Rest of the River (located downstream of the 1 ½ Mile Reach). As used in this Action Memorandum, the term "Site" shall refer to this overall GE-Pittsfield/Housatonic River Site as defined by the Consent Decree.

EPA is performing the removal action for the 1 ½ Mile Reach, with funding of the 1 ½ Mile Reach removal action being shared between GE and EPA based on the cost sharing procedures contained in Paragraph 103 of the Consent Decree.

II. 1 ½ Mile Reach Conditions and Background

CERCLIS ID #: MAD002084093

Site ID #: 0167

A. Description

1. History

See November 21, 2000 Action Memorandum (attached).

2. Removal Site Evaluation

See November 21, 2000 Action Memorandum (attached).

3. Physical Location and Site Characteristics

See November 21, 2000 Action Memorandum (attached).

4. Release or Threatened Release into the Environment of a Hazardous Substance, or, Pollutant or Contaminant

See November 21, 2000 Action Memorandum (attached).

5. NPL Status

EPA proposed the Site for inclusion onto the NPL on September 25, 1997. As part of the Consent Decree, EPA has agreed to defer a final decision on the proposed listing subject to

certain conditions, including GE's successful implementation of its obligations under the Consent Decree.

B. Actions Prior to the November 21, 2000 Action Memorandum

See November 21, 2000 Action Memorandum (attached).

C. State and Local Authorities' Roles

See November 21, 2000 Action Memorandum (attached).

D. Action taken since November 21, 2000.

Background

On November 21, 2000, Mindy Lubber, EPA New England's Regional Administrator, signed an Action Memorandum authorizing a removal action at the 1.5 Mile Reach. The Action Memorandum also documented that conditions at the site met the criteria for a "consistency" exemption from the \$2 million and 12-month statutory limits for removal actions set by the National Contingency Plan.

In general, the Action Memorandum required the removal of one to three feet of contaminated bank soil and two to three and one-half feet of contaminated sediment. In certain areas, additional removal was required. Restoration of the riverbanks and river bottom with clean fill was also required.

The Action Memorandum estimated that 95,375 cubic yards of bank soil and sediment would need to be excavated to meet the cleanup levels. The Consent Decree allows for 50,000 cubic yards of material excavated in the 1.5 Mile Reach to be disposed of in GE's On Plant Consolidation Areas (OPCAs). The Action Memorandum specified that the amount of material excavated in excess of 50,000 cubic yards would be disposed of at approved off-site disposal facilities. Also, Non-Aqueous Phase Liquid (NAPL) impacted material is prohibited from disposal at GE's OPCAs and would also have to be disposed of at off-site disposal facilities.

Prior to November 21, 2000, EPA had entered into an Interagency Agreement (IAG) with the United States Army Corps of Engineers (USACE) to assist EPA in conducting many activities at the GE-Housatonic River Site, including the 1.5 Mile Reach Removal Action. The USACE subsequently awarded a site-specific contract to Weston. Included in this contract was provisions for Weston to perform design and remediation activities on the 1.5 Mile Reach.

Phase I Design Activities

After the Action Memorandum was signed, EPA directed USACE/Weston to proceed with the design of Phase I of the removal action. In November 2002, EPA and the USACE approved the final Phase I design package. Phase I covers the first 1,450 feet of the 1.5 Mile Reach, beginning at the Lyman Street Bridge and ending approximately 700 feet upstream of the Elm Street bridge. See attached map of the 1.5 Mile Reach.

The remediation method and sequence specified in the Phase I design was as follows:

- Construct a sheetpile coffer dam in the river channel by installing sheetpile along the centerline of the river. Install sheetpile cut-off walls perpendicular to the centerline sheetpile and into the riverbank at an upstream and downstream location. This creates river “cells” approximately 300 feet long.
- Pump the standing water and any water that infiltrates into a cell to a water treatment system that treats the water and discharges it back into the river.
- Excavate contaminated sediment and bank soil within the sheetpile cell in “dry conditions”.
- Backfill and restore the riverbank and river channel within the sheetpile cell.
- Remove the cut-off walls from one side of the river and install them on the other side of the channel.
- Continue with the sequence above, proceeding from upstream to downstream.

From November 2001 through April 2002, EPA, USACE and Weston negotiated the terms of the Phase I construction task order modification. On May 17, 2002, the USACE gave Weston a notice-to-proceed for the construction of Phase I. Weston subsequently awarded a subcontract to Severson Environmental Services to perform a majority of the remediation activities, including excavation, backfilling and water treatment operations.

Site Preparation and Phase I Remediation Activities

On June 3, 2002, EPA initiated active remediation activities in the 1.5 Mile Reach. From June 3, through September, EPA/USACE’s contractors performed site preparation activities including mobilization, tree clearing, grubbing, access road construction, fence installation, surveying, conditions monitoring and set up of the water treatment system.

In September, the installation of sheetpile cofferdams in the river channel was initiated. On September 26, 2002, excavation of sediment and bank soil was initiated. Phase I soil and

sediment removal activities were performed from September 2002 through July of 2003. Remediation by the sheetpile cofferdam method was extended approximately 400 feet into Phase II. This was necessary to construct the temporary dam and bypass system in a remediated area. The temporary dam and bypass system were critical components of the remediation technique for Phases II and IIIA (see below).

For Phase I and the first 400 feet of Phase II, approximately 26,000 cubic yards of contaminated bank soil and sediment were excavated from the river channel. Of the 26,000 cubic yards, approximately 1,490 cubic yards were impacted by NAPL. All of the non-NAPL impacted material was transported to GE's OPCAs for disposal. The NAPL-impacted material was transported to approved off-site disposal facilities.

Design and Remediation of Phase II

Phase II of the removal action begins 700 feet upstream of the Elm Street Bridge and extends to the Dawes Avenue Bridge. Altogether, the approximate length for Phase II is 2,950 feet. The design of Phase II was performed during the Phase I remediation.

The remediation technique selected for Phase II and the first four hundred feet of Phase III (Phase IIIA) was a gravity bypass method. This required the installation of temporary dam at the end of Phase I and the installation of two 54-inch diameter pipes. The two 54-inch diameter pipes were placed in the river channel and connected to the dam. The temporary dam was constructed with slide gates in front of the 54-inch pipes and stop logs to regulate the flow of water. When the stop logs were removed, water flowed through the dam. When the stop logs were installed and the slide gates opened, the water backed up behind the dam and flowed through the 54-inch pipes. This resulted in a "dry" river channel downstream of the dam. The remediation sequence for the gravity bypass method was generally as follows:

- Place the 54-inch pipes on one side of the riverbed.
- Install the stop logs and open the slide gates, thereby creating a "dry" river channel.
- Isolate an approximate 300 foot section of the river channel installing a temporary berm at the downstream end of an excavation cell.
- Pump out any remaining water in the river channel to the water treatment system.
- Excavate and backfill one side of the river channel.
- Relocate the 54-inch pipes to the opposite side of the river channel
- Excavate and backfill the other side of the river channel.

- Continue downstream and proceed with sequence described above.

The construction of the temporary dam/gravity bypass system and the remediation of Phase II was performed from July 2003 through October 2004. For Phase II, excluding the first 400 feet (which was remediated by the sheetpile cofferdam method), a total of 30,500 cubic yards of contaminated soil and sediment were removed the river channel. Of the 30,500 cubic yards, approximately 5,650 cubic yards were NAPL-impacted. The non-NAPL soil and sediment was transported to either GE OPCAs or to approved off-site disposal facilities. The NAPL-impacted material was transported to approved off-site disposal facilities. EPA switched to the gravity-bypass method for Phase II because the presence of shallow bedrock prevented the use of sheetpile.

Design and Remediation of Phase 3

Phase III begins at the Dawes Avenue bridge and extends to the confluence of the East and West branches of the Housatonic River. The approximate length of Phase III is 3,200 feet. The design for Phase III was completed during the remediation of Phase II. The design called for continuing with the temporary dam/gravity bypass method for the first 400 feet of Phase III (Phase IIIA) and then switching back to the sheetpile cofferdam method.

The remediation of Phase IIIA was performed in November and December of 2004. This involved the excavation and disposal of approximately 3,800 cubic yards of contaminated sediment and soil. NAPL was not observed in Phase IIIA. The excavated soil and sediment was transported to either GE OPCAs or to approved off-site disposal facilities.

From January through March 2005, the 54-inch bypass pipes were removed from the river channel and the water treatment system was relocated from an area adjacent to the upstream portion of the 1.5 Mile Reach to a location adjacent to the downstream portion of the 1.5 Mile Reach. This was required because of the logistics of pumping water from the excavation cells all the way back up the upstream portion of the 1.5 Mile Reach. No further relocations of the water treatment system will be required.

The remediation of the remainder of Phase III was initiated in March of 2005 and is currently underway.

Acquisition of Easements and Leases

Concurrent to performing design and remediation activities, EPA also performed activities to secure access from property owners. The OSC and case attorney, with regional management concurrence, determined it was appropriate to offer and obtain compensated easements and leases from affected property owners.

EPA New England requested concurrence from OSWER/OSRTI and OGC to offer compensated easements and leases on three separate occasions. In addition, EPA New England requested approval to purchase eight small parcels of land that abut the Housatonic River. Two of these parcels are residential properties; the other six are vacant. The requests generally coincided with the three Phases of the removal action. OSWER/OSRTI and OGC concurred with all three requests. To date, EPA, with assistance from the USACE, has secured easements or leases for approximately 53 properties. GE, on behalf of EPA, purchased six of the eight properties, including the two residential properties, and transferred ownership directly to the City of Pittsfield. The owner of the other two parcels declined to sell; instead easements were obtained. GE, also on behalf of EPA, demolished the two residential structures. GE's acquisition and demolition costs are considered 1.5 Mile Costs for purposes of the EPA-GE cost share agreement under the Site Consent Decree. EPA paid relocation costs associated with the purchase of the residential properties.

Four additional leases are required for Phase 3C of the removal action.

Reasons for a Ceiling Increase

The primary reasons for a ceiling increase are provided below:

- The method used to generate the cost estimate did not account for subcontractor markups that are being incurred under the contract the USACE has with Weston. The contract that the USACE has with Weston is a cost-reimbursable design-build contract, where Weston proposed, and the EPA and USACE accepted, that a substantial amount of remediation be performed by team subcontractors. Cost-reimbursable contracts stipulate that the contractor receive markups that generally range from 10 to 20% on all subcontract costs. This markup was not factored into the cost estimate.
- The costs for acquiring easements and leases were not included in the original cost estimate. The decision to acquire leases and easements was made after the cost estimate was completed.
- The costs for response actions associated with NAPL were not included in the original cost estimate.
- The costs for monitoring and surveying were not included in the original cost estimate. The monitoring items that were excluded include surveying, surface water sampling, air monitoring, and pre-construction conditions and settlement monitoring for houses, structures and properties within the general area of construction activities.
- The cost estimate significantly underestimated the cost of retaining walls. Retaining walls were required to ensure long-term stability of riverbanks.
- The cost for site preparation activities such as access road and staging area construction were underestimated in the original cost estimate.
- The cost for removal of access roads and support areas, disposal of access road and support area gravel, and restoration for these areas was greatly underestimated in the original cost estimate.

- The type of temporary dam constructed as part of the bypass system was much more substantial than envisioned in the EE/CA. While the dam worked extremely well and allowed for excavation to be performed in “dry” conditions with relatively few over toppings, the cost to construct and remove the dam exceeded the cost in the original cost estimate.
- The price of fuel and electricity have significantly increased over the estimated amount in the original cost estimate.
- Additional costs of escalation/inflation costs were caused by GE not completing upstream remediation in 2001 as originally planned. The 1.5 Mile Reach was initially scheduled to being in 2001, upon completion of GE’s remediation. However, GE did not complete the upstream remediation (Upper ½-Mile Reach) until September 2002. This year delay results in major remediation activities being performed from 2002 through 2006 as opposed to 2001 through 2005.
- Costs were increased because of OSWERs decision to assign management and support costs, set at 2% of incurred costs, to Site-Specific IAGs between EPA and the USACE. This policy became effective October 1, 2004.

The additional funds will be used to complete the removal action. If a ceiling increase is not granted, EPA will not be able to complete the removal action. Completion of the 1.5 Mile Reach Removal Action is necessary to mitigate the threats to human health and the environment described in the original Action Memorandum. The remaining properties where remediation is required include a City park, several residential properties, recreational properties and one commercial property. In addition, the remediation of the associated floodplains that GE is required to perform under the Consent Decree cannot be completed until EPA completes the sediment and bank remediation, due to concerns that flooding may recontaminate the floodplains. Furthermore, remediation of the 1.5 Mile Reach is necessary in the event remediation is required for the downstream Rest of River portion of the GE-Housatonic River Site. EPA currently anticipates making a remedy decision on Rest of River in 2007.

III. Threats to Public Health or Welfare or the Environment

The threats to Public Health or Welfare or the Environment have not changed. See the November 21, 2000 Action Memorandum (attached).

IV. Endangerment Determination

Actual or threatened releases of hazardous substances from the 1 ½ Mile Reach, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, welfare, or the environment.

V. Exemption From Statutory Limits

The November 21, 2000 Action Memorandum documented that conditions at the 1.5 Mile Reach met requirements for an exemption from the one-year and \$2,000,000 limits. Conditions at the 1.5 Mile Reach removal action continue to meet the requirements of CERCLA Section 104(c): a response action continued beyond twelve months and valued at over \$2 million that is otherwise appropriate and consistent with the remedial action to be taken at the Site. No additional remedial activities are expected to be performed in the 1 ½ Mile Reach. However, EPA is evaluating the need for, and the extent of, remedial actions in the Rest of the River (as defined by the Consent Decree) below the confluence of the East and West branches of the river. Excavating and removing contaminated sediment and riverbank soil upstream in the 1 ½ Mile Reach will not interfere with likely remedial alternatives to address sediment and soil contamination downstream. Accordingly, this response action is consistent with the remedial action to be taken at the Site. This removal action is also appropriate because the migration of contaminants further downstream will be minimized. The Proposed Action will contribute to the efficient, cost-effective performance of a long-term remedial action for the Housatonic River.

VI. Proposed Action and Estimated Costs

A. Proposed Action

1. Proposed Action Description

The proposed actions are to complete the sediment and bank excavation for Phase III as described in the November 21, 2000 Action Memorandum. A more detailed description of actions to be performed are contained in the final plans and specifications for Phase III.

2. Community Relations

See November 21, 2000 Action Memorandum (attached).

3. Contribution to Remedial Performance

See November 21, 2000 Action Memorandum (attached).

4. Engineering Evaluation/Cost Analysis ("EE/CA")

See November 21, 2000 Action Memorandum (attached).

5. Description of Alternative Technologies

See November 21, 2000 Action Memorandum (attached).

6. Applicable or Relevant and Appropriate Requirements (ARARs) and Other Determinations

See November 21, 2000 Action Memorandum (attached).

7. *Project Schedule*

The current schedule is to complete excavation and backfill activities in 2006. Final site restoration and demobilization activities will likely be completed in 2007.

B. Estimated Costs¹

	<u>Original Ceiling</u>	<u>Costs to Date²</u>	<u>Proposed Ceiling</u>
Extramural Costs:	\$53.13 million	\$50 million	\$90 million
Extramural Costs Contingency (20% of Extramural Costs)	\$10.63 million	\$0	\$18 million
Total, Removal Action Project Ceiling:	\$63.76 million	\$50 million	\$108 million

See November 21, 2000 Action Memorandum (attached) for additional information on the original project ceiling.

VII. Expected Change in the Situation Should Action be Delayed or Not Taken

Delayed or no action will increase the human health and environmental risks by allowing for: (1) the continuation of direct contact, ingestion, inhalation and adsorption of PCBs and non-PCB hazardous substances by residents, recreational users, trespassers, and workers; (2) the continued migration of PCBs and non-PCB hazardous substances; and (3) the continued threats and damage to sensitive ecosystems (i.e., the Housatonic River).

VIII. Outstanding Policy Issues

None

¹Extramural costs are the costs to be incurred by EPA's contractors or by other Federal Agencies through an Interagency Agreement. Extramural costs exclude costs for post-removal site control activities and GE-incurred costs associated with the 1.5 Mile Reach. In accordance with EPA OSWER guidance document 9360.0-42, dated November 5, 2001, project ceilings in Action Memoranda are limited to extramural costs only. Intramural and indirect costs are no longer included in Action Memoranda project ceilings.

²Costs to date are estimated through December 21, 2004.

IX. Enforcement

The total EPA costs for this removal action based on full-cost accounting practices that will be eligible for cost recovery are estimated to be \$143,346,000.³ This is based on the following:

Total extramural direct cost estimate:	\$108,000,000
Total intramural direct cost estimate (e.g., EPA personnel and travel costs):	<u>+\$1,000,000</u>
Total direct cost estimate:	\$109,000,000
Total indirect cost estimate (\$109,000,000 X 0.3151 = \$34,346,000): ⁴	<u>+\$34,346,000</u>
Total estimated EPA costs for the removal action:	\$143,346,000

Additional enforcement-sensitive information is attached.

X. Recommendation

This decision document represents the selected removal action for the 1.5 Mile Reach Removal Action, GE-Pittsfield/Housatonic River Site in Pittsfield, Massachusetts, developed in accordance with CERCLA as amended, and not inconsistent with the NCP. This decision is based on the administrative record for the 1.5 Mile Reach Removal Action. The total removal action project cost ceiling, if approved, will be \$108,000,000. Funding is expected to be provided from special accounts associated with the Consent Decree and from EPA headquarters. EPA headquarters has provided \$15,300,000 to date and has committed to provide an additional \$9,600,000.

The removal action proposed in this Action Memorandum will abate, prevent, minimize, stabilize, mitigate and/or eliminate the release or threat of release of hazardous substances at the 1 ½ Mile Reach. Furthermore, conditions at the 1.5 Mile Reach continue to meet the NCP

³Direct Costs include direct extramural costs and direct intramural costs. Indirect costs are calculated based on an estimated indirect cost rate expressed as a percentage of site-specific direct costs, consistent with the full cost accounting methodology effective October 2, 2000. These estimates do not include pre-judgement interest, do not take into account other enforcement costs, including the Department of Justice costs, and may be adjusted during the course of the removal action. The estimates are for illustrative purposes only and their use is not intended to create any rights for responsible parties. Neither the lack of a total cost estimate nor deviation of actual total costs from this estimate will affect the United States' right to cost recovery.

⁴Based on fiscal year 2004 provisional indirect rate of 31.51%.

Amended Action Memorandum - Ceiling Increase

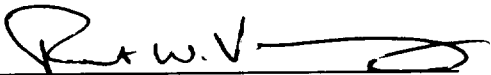
GE-Pittsfield/Housatonic River Site

1 1/2-Mile Reach

Page 12 of 12

§300.415(b)(2) criteria for removal actions and the criteria for the CERCLA Section 104(c) consistency exemption from the 12-month and \$2 million limitations on removal actions.

Therefore, I recommend your approval of this Action Memorandum which will increase the total removal action project ceiling from \$63,760,000 to \$108,000,000.

Approval:  Date: 4/28/05
Robert Varney
Regional Administrator

Disapproval: _____ Date: _____
Robert Varney
Regional Administrator

Attachments:

Enforcement Strategy (Confidential)

November 21, 2000 Action Memorandum

1.5 MILE REACH

LYMAN STREET

**PHASE 1 - SHEETPILE
DIVERSION**

ELM STREET

**PHASE 2 - GRAVITY
BYPASS**

DAWES AVENUE

**PHASE 3 - SHEETPILE
DIVERSION**

POMEROY AVENUE

CONFLUENCE



660 0 660 1320 FEET